

3) no solution

4) $(7/3, -8/3)$

5) $(1, 4)$

7) infinitely many solutions

8) 1 solution

9) no solution

13) $(-5/4, -15/4)$

14) $(6, 6)$

15) infinitely many solutions

17) no solution

19) 371 student tickets

566 non-student tickets

$$\begin{array}{l} -2x + 2y = -5 \\ 2(x + y = -5) \cdot 2 \end{array}$$

$$\begin{array}{r} -2x + 2y = -5 \\ + 2x + 2y = -10 \\ \hline \end{array}$$

$$4y = -15$$

$$y = -15/4$$

$$\begin{array}{r} x + \frac{-15}{4} = -5 \\ + \frac{15}{4} \quad + \frac{15}{4} \end{array}$$

$$x =$$

$$3x + 5y = 3943$$

$$x + y = 937$$

$$\rightarrow x = 937 - y$$

$$3(937 - y) + 5y = 3943$$

$$2811 - 3y + 5y = 3943$$

$$2811 + 2y = 3943$$

$$2y = 1132$$

$$y = 566$$

$x = \text{students}$
 $y = \text{non}$

$$x + 566 = 937$$

$$x = 371$$

371 student
566 non

$$-2(6x + 6y = 3)$$

$$3(4x + 4y = 2)$$

$$-12x - 12y = -6$$

$$12x + 12y = 6$$

$$0 = 0$$

∞

\mathbb{R}

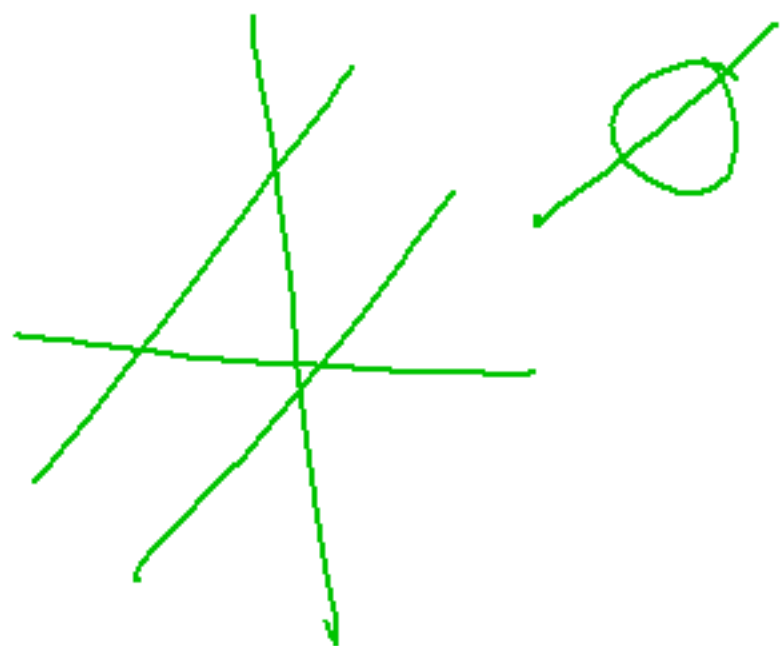
$$3(-5x + 7y = 10)$$

$$15x - 21y = 22$$

$$-15x + 21y = 30$$

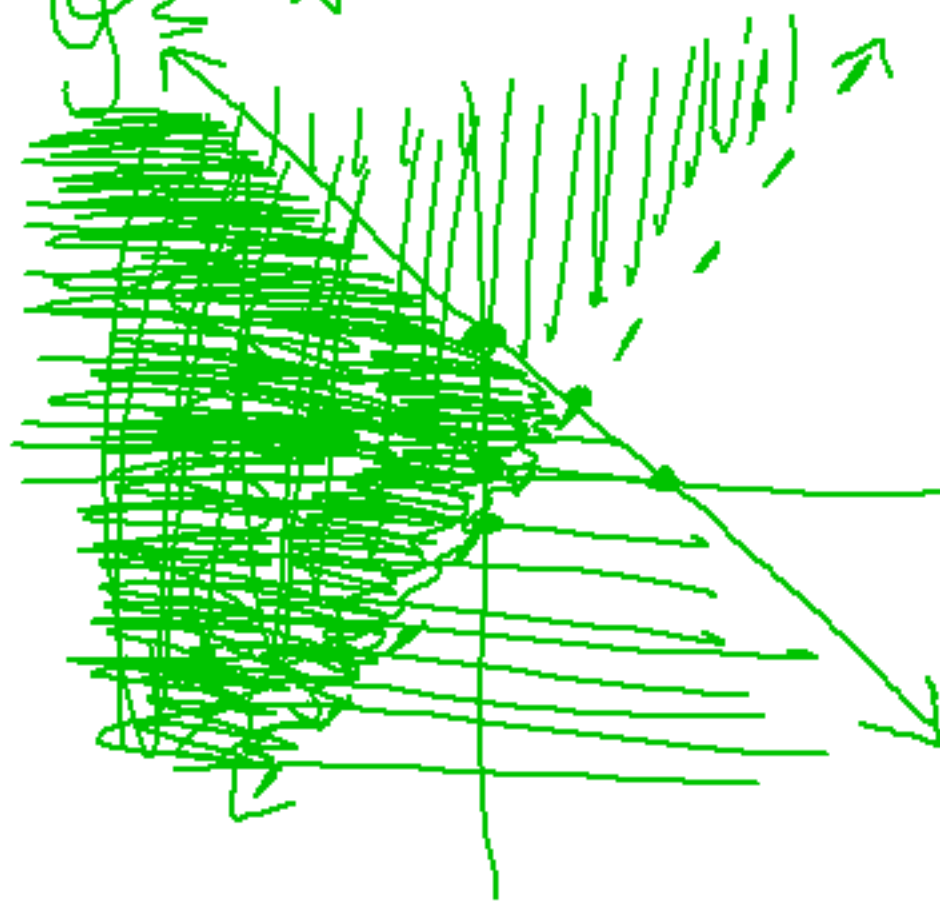
$$15x - 21y = 22$$

$$0 \neq 52$$



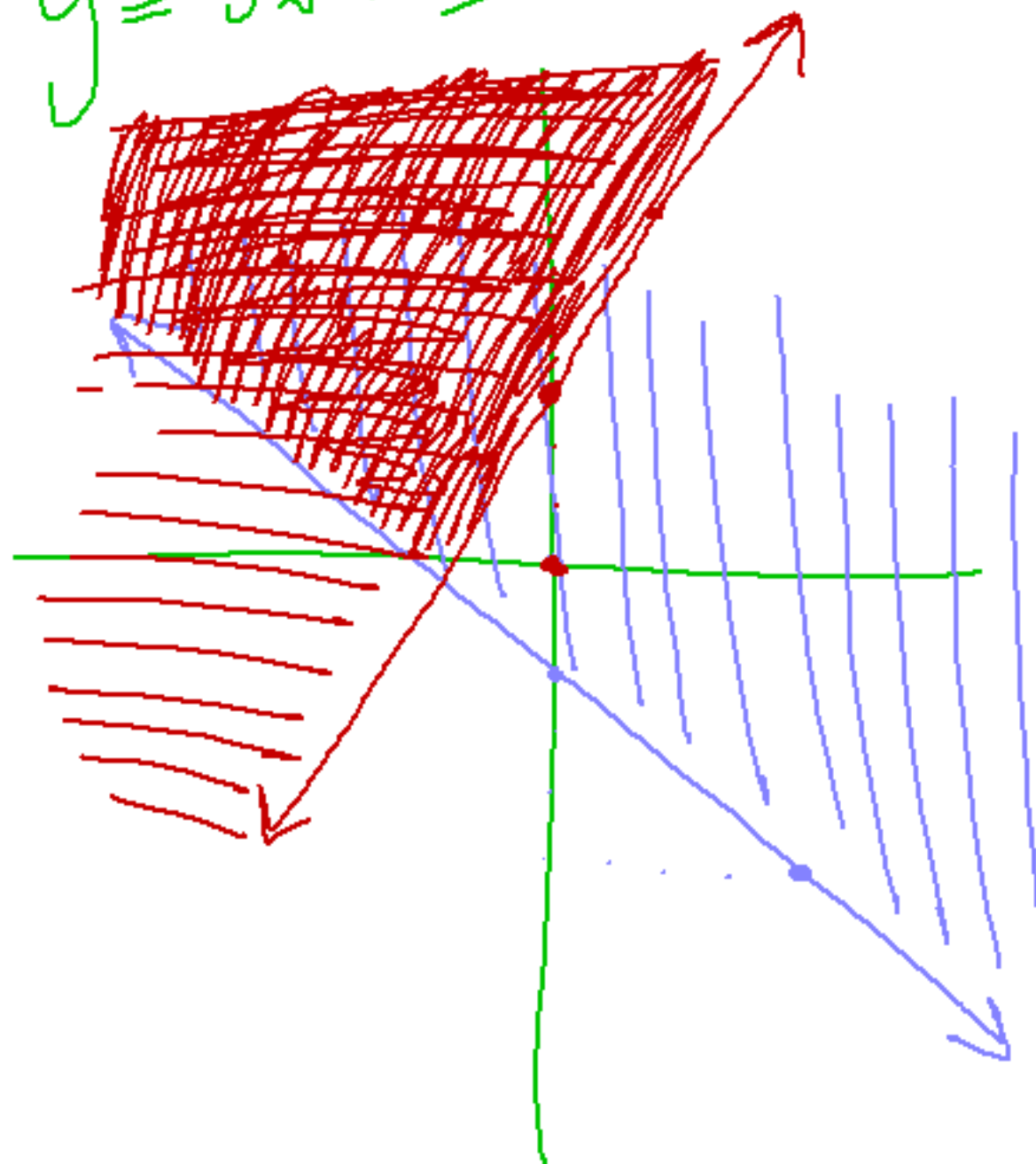
3.1-3.3 systems of Linear Inequalities

① $y > 2x - 1$ $0 > -1$
 $y \leq -x + 2$ $0 \leq 2$

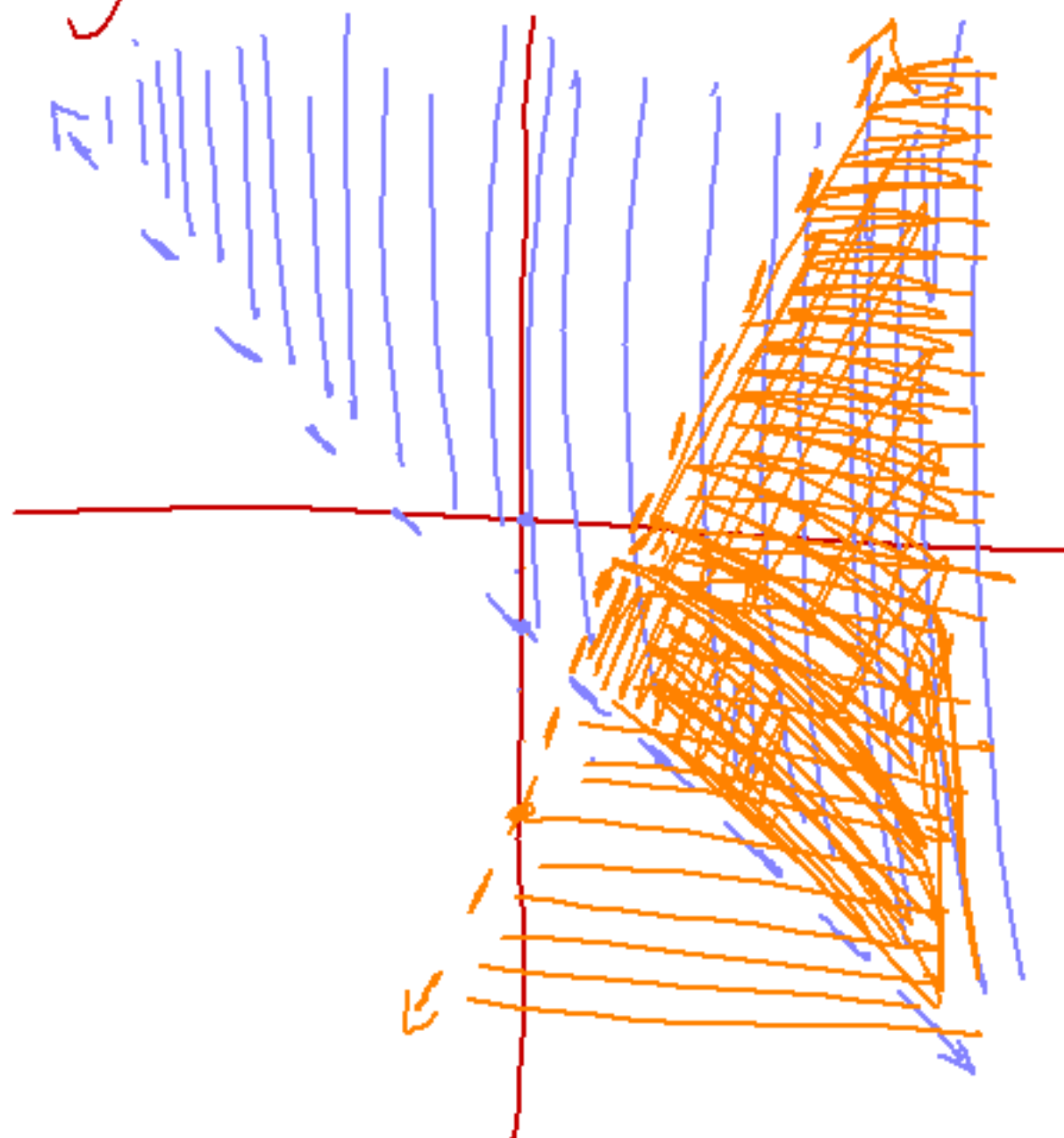


② $y \geq -\frac{3}{4}x - 2$
 $y \geq 3x + 3$

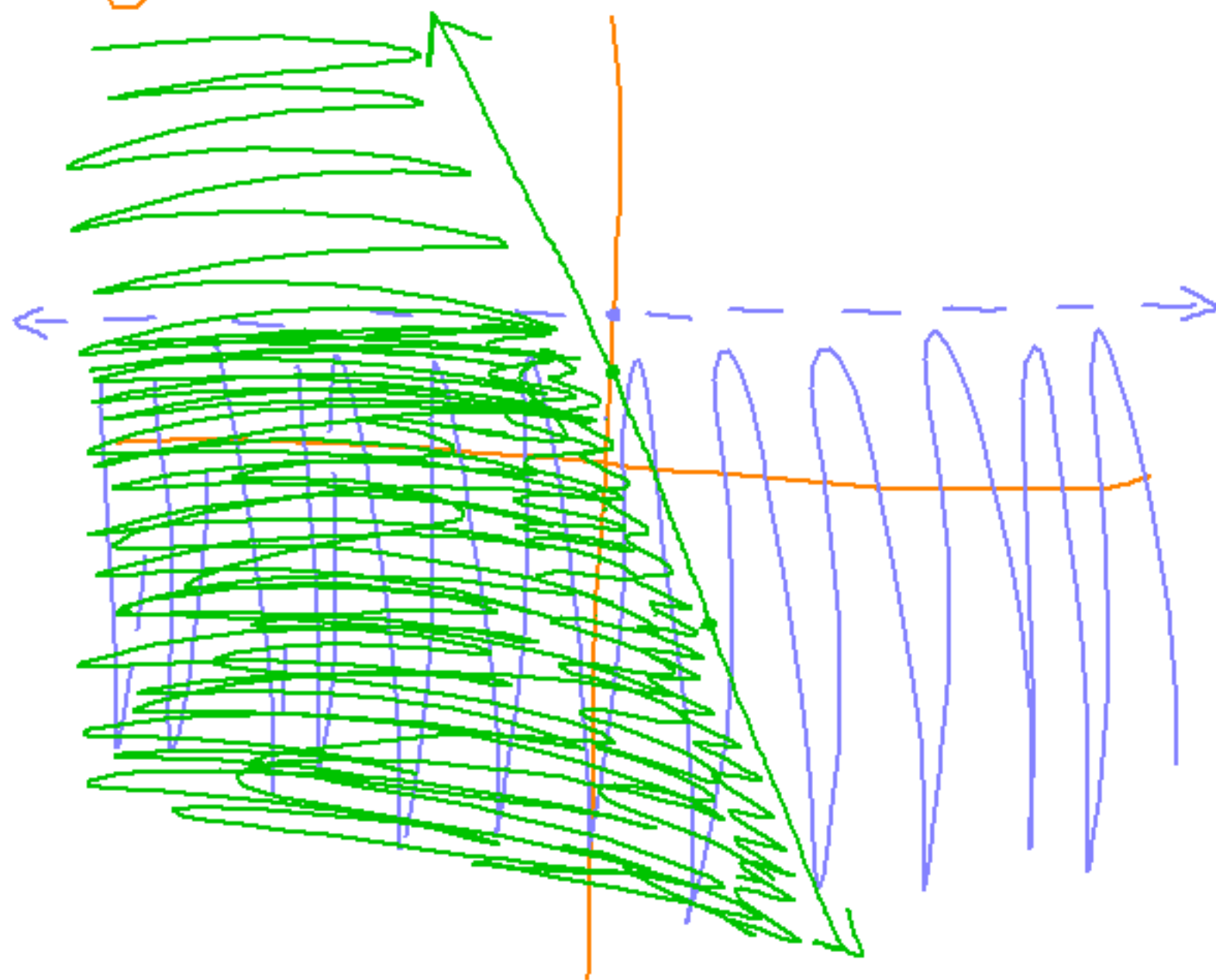
$0 \geq -2$
 $0 \geq 3$



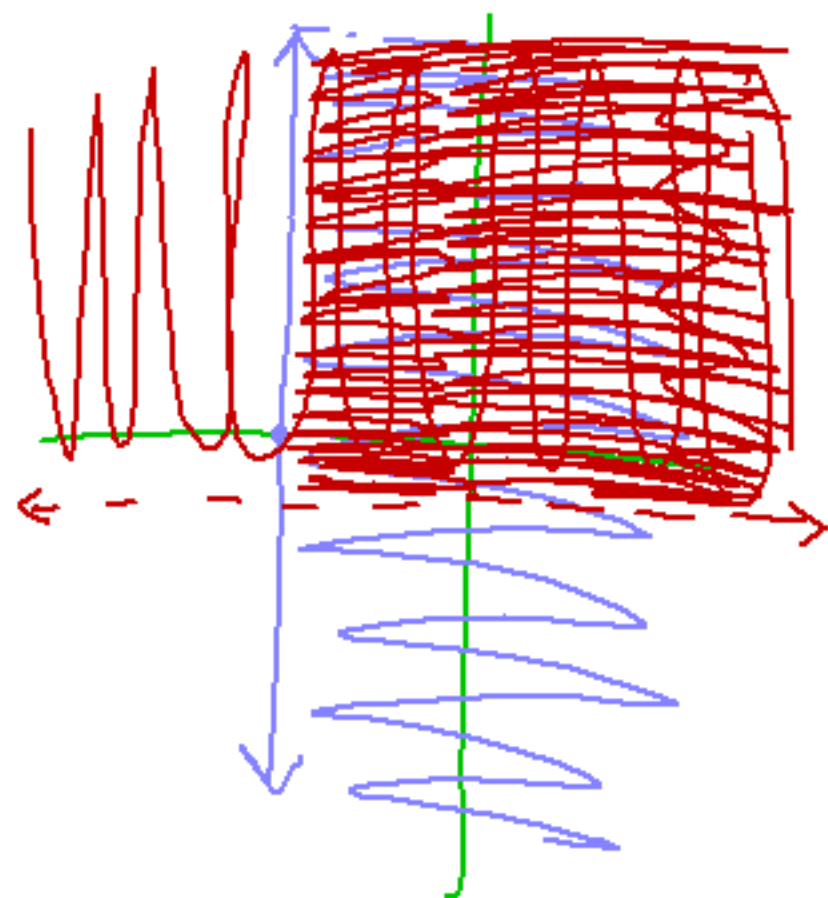
③ $y > -x - 2$ $0 > -2$ ✓
 $y < 4x - 5$ $0 < -5$ ✗



④ $y < 3$
 $y \leq -\frac{5}{2}x + 2$

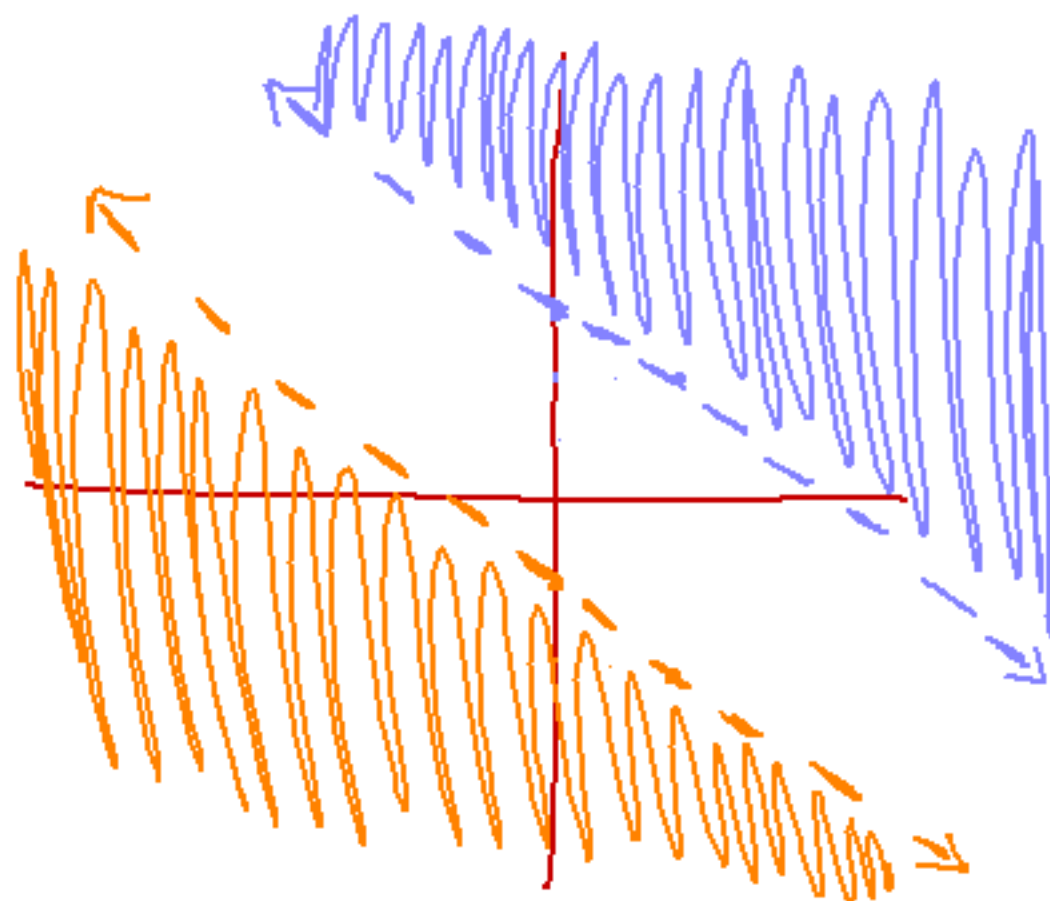


$$\textcircled{5} \quad \begin{aligned} x &\geq -4 \\ y &> -1 \end{aligned}$$



$$\textcircled{6} \quad \begin{aligned} y &> -\frac{1}{2}x + 3 \\ y &< -\frac{1}{2}x - 1 \end{aligned}$$

$$\begin{aligned} 0 &> 3 \quad \times \\ 0 &< -1 \quad \times \end{aligned}$$



no solution



⑦

$$y < x$$

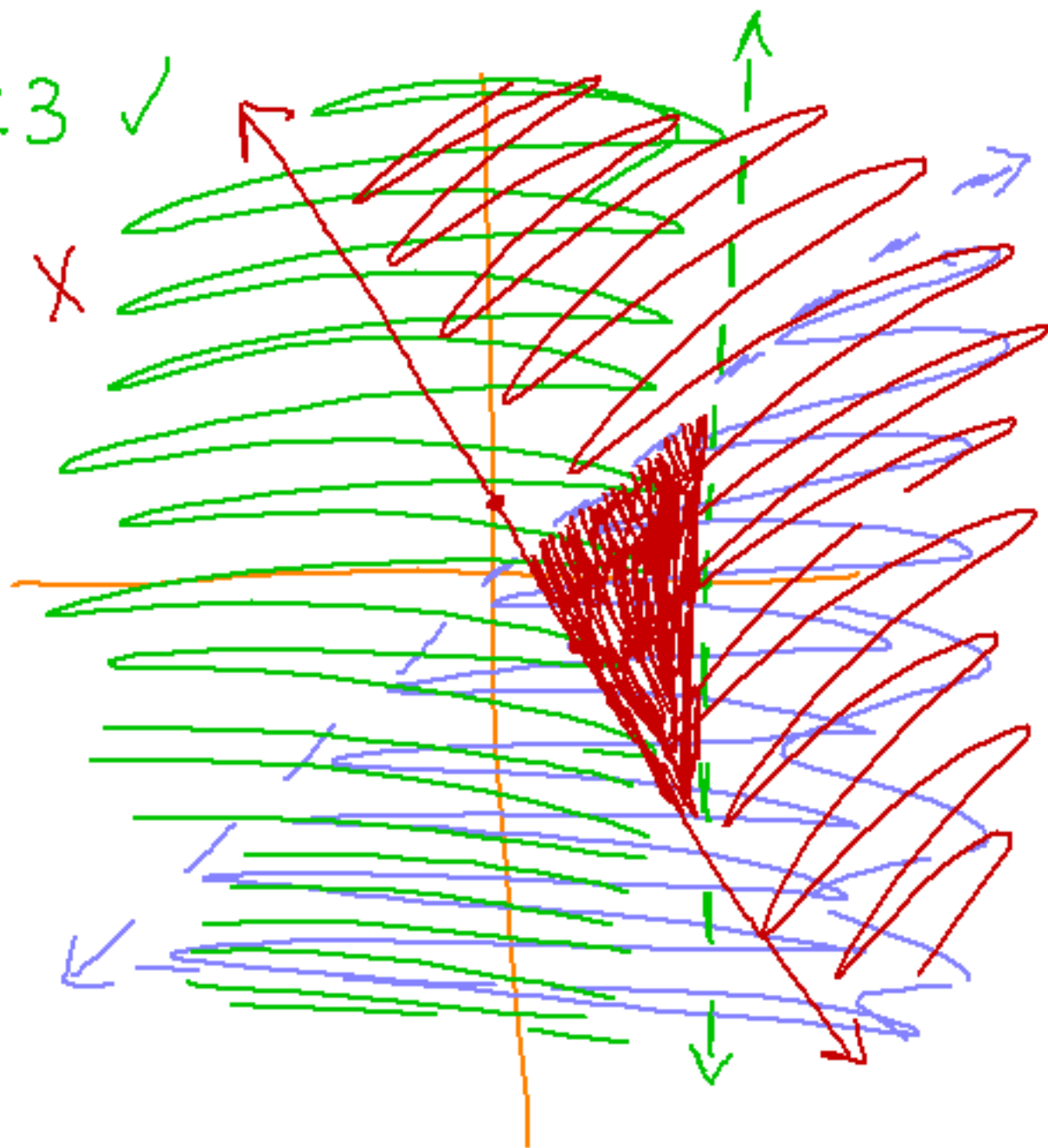
$$x < 3$$

$$y \geq -2x + 1$$

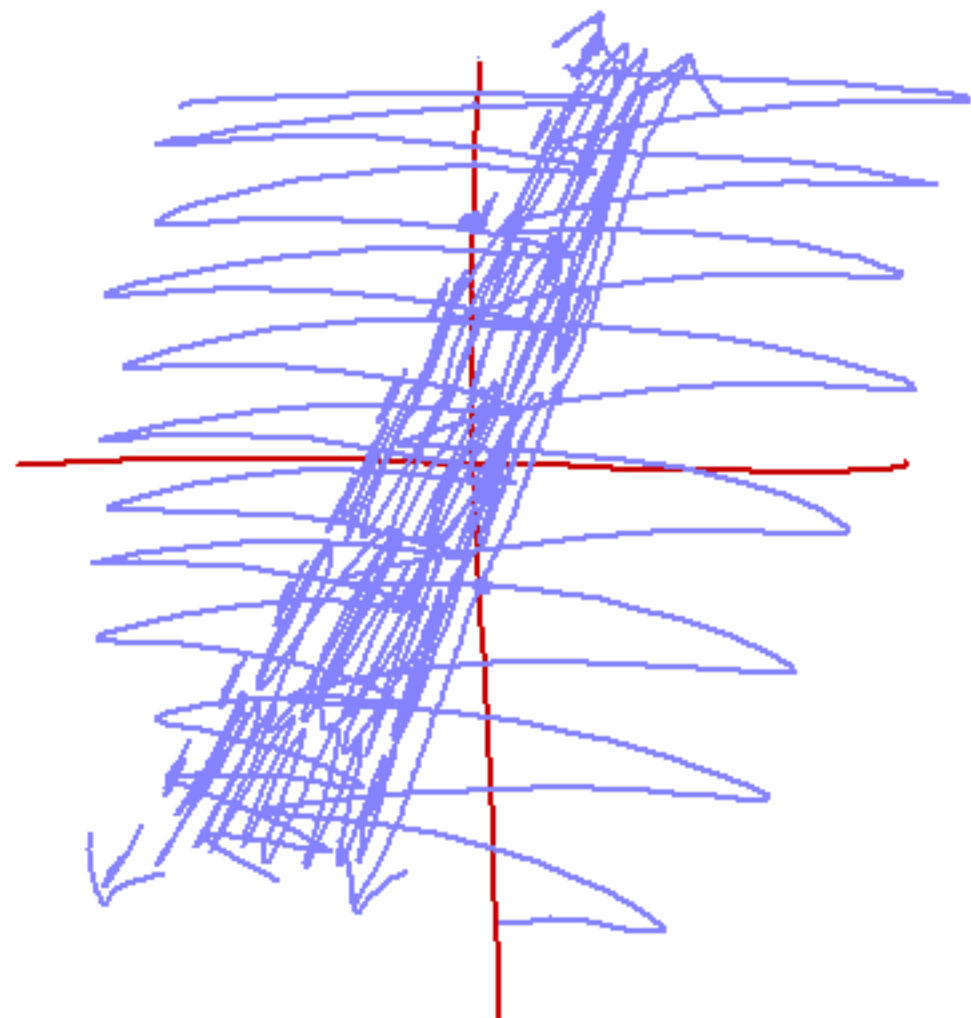
$$-1 < 1 \quad \checkmark$$

$$0 < 3 \quad \checkmark$$

$$0 > 1 \quad \times$$



⑧ $y \geq 3x - 2$
 $y < 3x + 4$

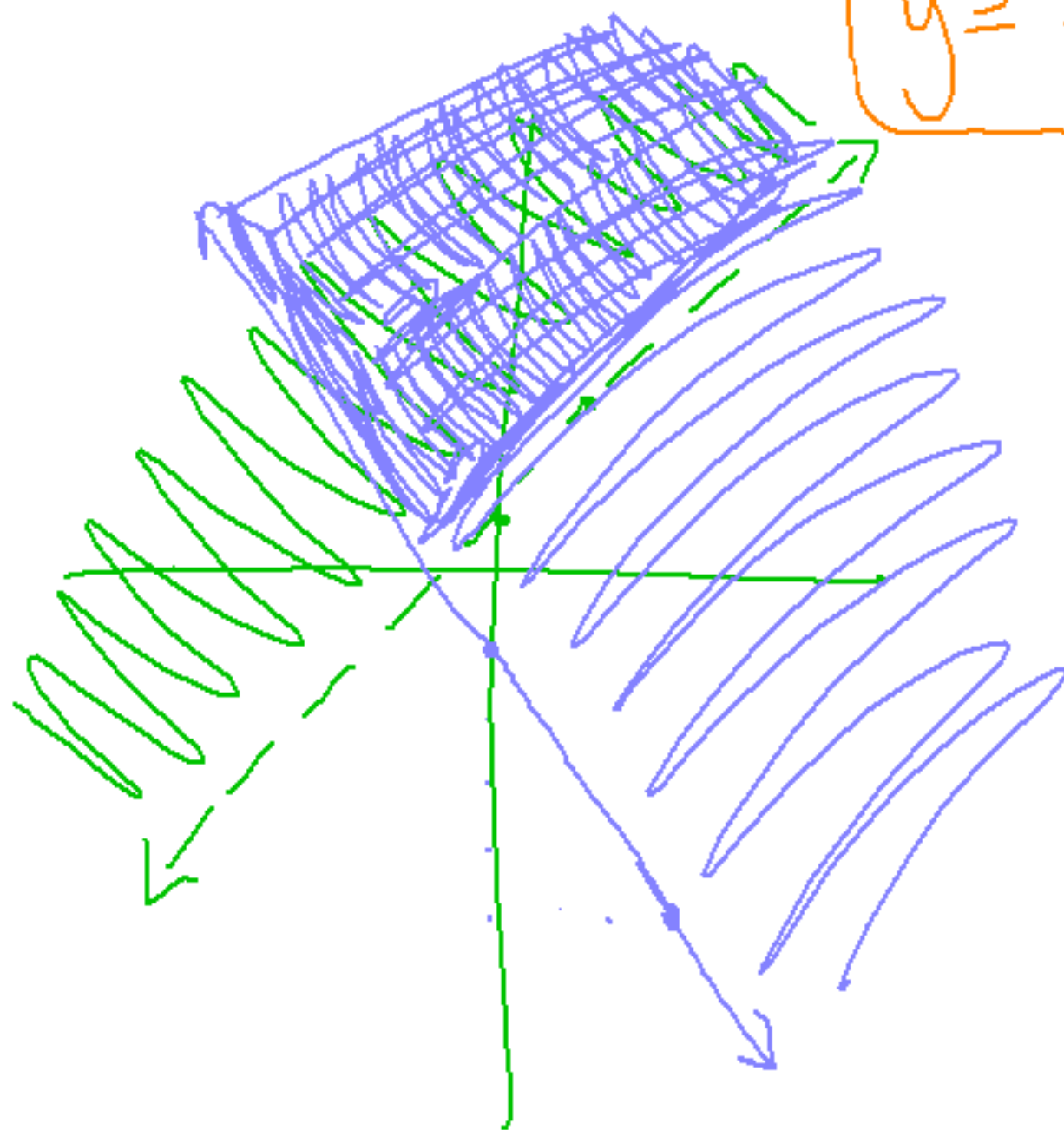


⑨ $-2x + y > 1$
 $-4x - 3y \leq 3$

$y > 2x + 1$

$-3y \leq 4x + 3$

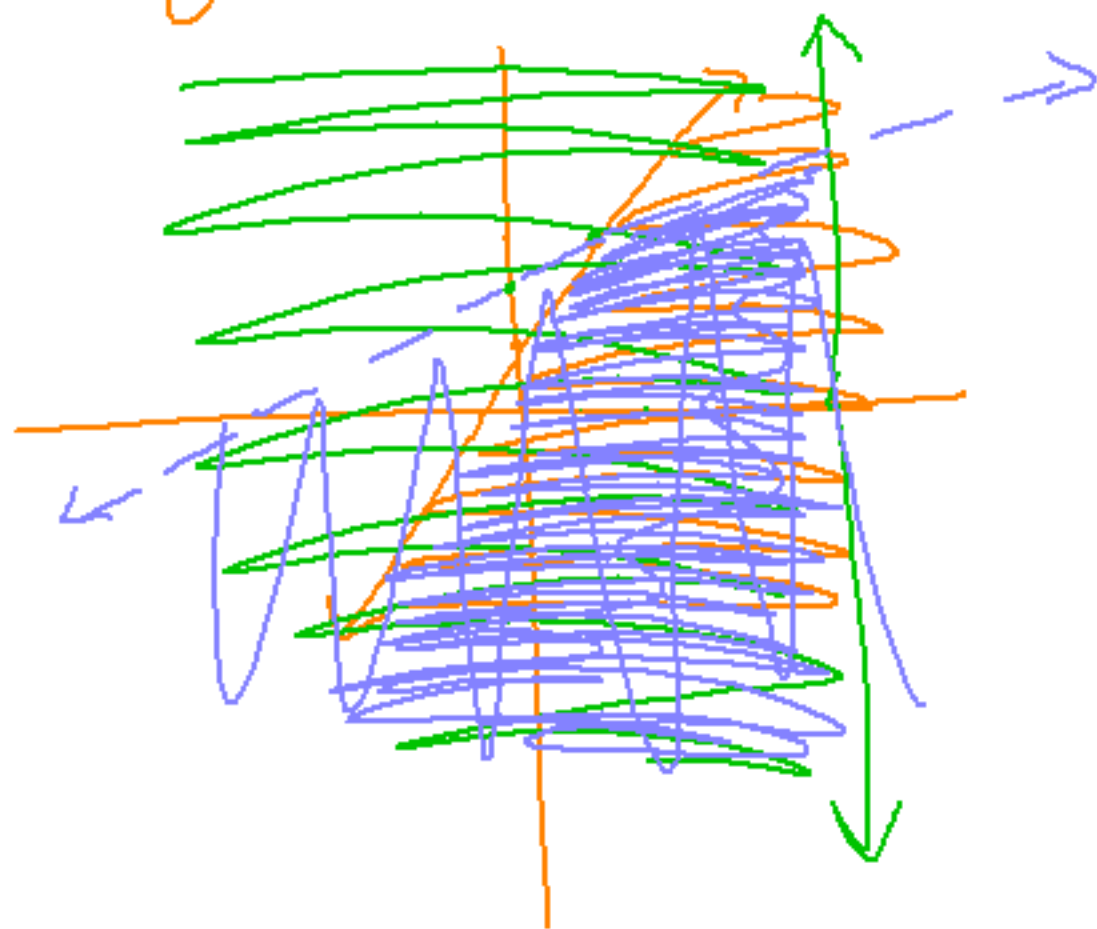
$y \geq -\frac{4}{3}x - 1$



43 $2x + 1 \geq y$

$x \leq 5$

$y < x + 2$



HW

#39 (add)